changed relative to the immediate prior version, except that marked up versions are not being supplied for any canceled claim.

10. (Amended) A method of making a sputtering target assembly comprising:

a) providing high purity copper target of at least about 99.999 wt.% purity;

b) preparing a master alloy comprising copper and not more than about 10 ppm of at least one of Ag, Sn, Te, In, Mg, B, Bi, Sb, and P;

c) preparing a cast billet by forming a molten combination of copper and master alloy and solidifying the molten combination;

d) deforming the cast billet for a total of at least about 50% deformation on each axis and then rapidly quenching the deformed billet;

e) frictionless forging the quenced billet at elevated temperature to about 70% of the starting length of the billet, and rapidly quenching;

f) cold rolling to a total of about 90% deformation;

g) providing an aluminum alloy backing plate having a preclad CuCr surface; and precipitation hardening the aluminum alloy backing plate.

11. (Amended) A method according to claim 10 wherein the preparing said master alloy comprises:

forming a combination by combining the high purity copper with the at least one of Ag, Sn, Ti, In, Mg, B, Bi, Sb, and P;

melting the combination; and

casting the combination.

12. (Amended) A method according to claim 11 wherein the high purity copper is combined with the at least one of Ag, Sn, Ti, In, Mg, B, Bi, Sb, and P in a ratio of about 1000 to 1.

13. (Amended) A method according to claim 10 further comprising:

forming the aluminum alloy backing plate wherein the forming comprises:

embedding an alloy of Cu and Cr in an aluminum or aluminum alloy envelope;

welding the envelope closed in a vacuum environment;

heat treating the enclosed envelope;

forging, wherein the forging brings the CuCr into intimate contact with the aluminum alloy to be used as a backing plate;

quenching;

removing the aluminum alloy envelope to expose the CuCr surface; and

precipitation hardening the aluminum alloy.

18. A method of forming a sputtering target comprising:

forming a master alloy comprising:

a first high purity copper material; and

a micro-alloy grain stabilizer comprising at least one of Ag, Sn, Te, In, Mg, B, Bi, Sb, and P dispersed within the first high purity copper material;

adding an amount of the master alloy to a second high purity copper material to form a sputtering target composition having a desired concentration of the micro-alloy grain stabilizer dispersed within copper; and

shaping the sputtering target composition into a target configuration.

19. The method of claim 18 wherein the forming the master alloy comprises combining the first high purity copper material with the micro-alloy grain stabilizer in a ratio of at least about 1000 parts copper to 1 part of the micro-alloy grain stabilizer.

20. The method of claim 18 wherein the first and second high purity copper materials have a purities of at least about 99.999 wt.%.

21. The method of claim 18 wherein the first and second high purity copper materials have a purities of at least about 99.9995 wt.%.

22. The method of claim 18 wherein the micro-alloy grain stabilizer is silver.